indicated the need for a gold-base alloy and brazing in an inert gas atmosphere.

Available gold-nickel alloys met the requirements except for their high melting points. A review of additives for the depression of melting points resulted in the selection of indium. Indium has good solubility with both gold and nickel, and the liquidus temperatures of gold-indium and nickel-indium binary systems can be substantially reduced by small increases in the indium content. The low content of indium in the selected brazing filler metal minimises the effect of indium's high vapour pressure. This brazing alloy may be used in high temperature electrical systems in lieu of conventional gold-nickel, gold-copper or silver brazing filler metals; it has low electrical resistivity, does not require a flux, and is less corrosive than other gold-nickel and gold-copper alloys.

The Future

The gold-nickel and gold-copper brazing alloys have found wide usage in the aerospace, nuclear and electronics industries. This is based on the enviable properties that these alloys exhibit. The gold-nickel alloy has a sharp solidus/liquidus transition; both gold-nickel and gold-copper have reasonable flow in varying gap situations without excessive "flashing"; both have strength and ductility, and the gold-nickel alloy possesses good resistance to oxidation at elevated temperatures.

Thus the gold-base brazing alloys are widely used and have been able to fill an important gap in the brazing alloy spectrum.

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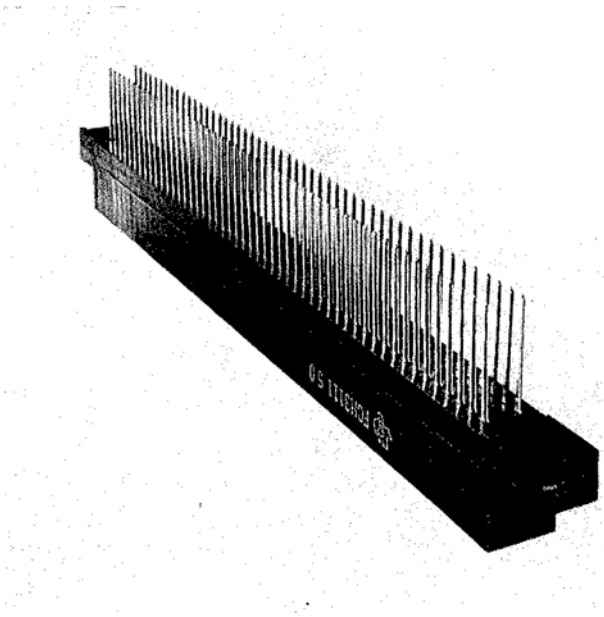
Gold Inlaid Contacts in New Edge Connectors

Already established with a range of interconnection systems, Texas Instruments has now introduced a new series of printed circuit edgeboard connectors in which a hard gold inlay is confined to the actual contact area.



Thirty standard types based upon 0.100 inch and 0.125 inch centres, in both wire wrapped and solder tail pin construction, have been made available to meet commercial applications.

The use of the gold inlay technique as opposed to gold plating for the contacts enables a relatively thick layer of gold to be located only where it is needed—where low contact resistance and good wearing properties are essential. The spring material used is a corrosion resistant copper alloy containing 9 per cent nickel and 2 per cent tin, and in the course of manufacturing the strip a continuous narrow stripe of a hardened gold alloy is inlaid and firmly bonded to the base metal along its base and edges. The thickness of the gold alloy is 100 microinches, and the inlay technique eliminates wastage of gold.

Texas Instruments is one of the leading producers of bi-metals for contacts and other purposes at its main plant in Attleboro, Massachusetts. This technique makes it possible to select any desired combination of width and thickness of gold or gold alloy inlay, and to produce more than one stripe—or stripes on both faces—in a base metal alloy for contact purposes.